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2019
中国室内环境健康舒适体验研究报告

Health & Comfort of Indoor living envi-ronment evaluation index in 2019- IIpsos Report & Conference

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INTRODUCTION
引 言

在中国消费升级及绿色环保的时代背景下，室内生活品质的提升也成为行业和大众共同关注的重要环节。如何住的健康与舒适，居民整体感受如何？他们正在经受着哪些困扰？亟需行业解决哪些方面的改善？益普索（中国）有限公司联合朗诗集团联合发布《2019年中国室内环境健康舒适体验研究报告》，旨在深度挖掘居民感受及需求，探索行业发展方向，为大众室内健康舒适居住条件的提升与改善提供科学系统的参考依据。

In the context of China's consumption upgrading and green environmental protection, the improvement of indoor living quality has become an important link of common concern for the industry and the public. How can residents live in health and comfort, and how do they feel? What are they suffering from? What improvements are urgently needed? Ipsos (China) Co., Ltd. and Landsea Green Group jointly released the research Report on Healthy and Comfortable Indoor Environment experience in China 2019, aiming to deeply explore residents' feelings and needs, explore the development direction of the industry, and to provide scientific and systematic reference for the refinement and the improvement of indoor healthy and comfortable living conditions.

HEALTH & COMFORT OF INDOOR LIVING ENVI-RONMENT EVALUATION INDEX IN 2019- LIPSOS REPORT & CONFERENCE

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1 INDUSTRY INTRODUCTION 行业概览

绿色建筑发展起步比国外晚，但行业发展空间巨大。

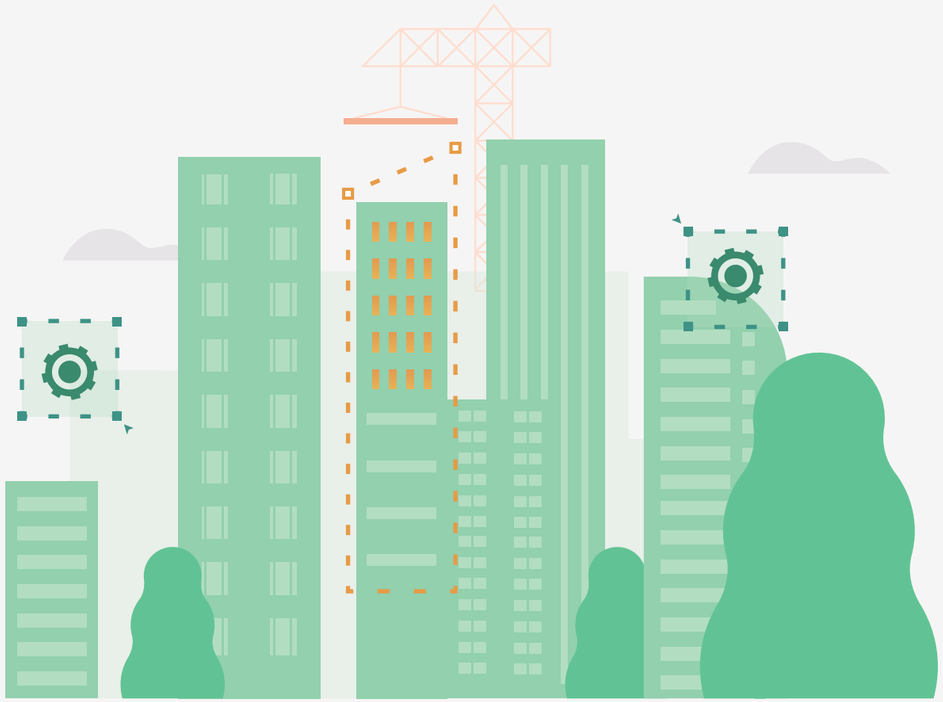
Though the domestic green building started later than the abroad, it has a huge development space.

中国绿色建筑的发展起步比国外晚30年，近几年发展步伐加快。虽每年增长的绿色建筑面积超过20%，但2019年仍只占全年新开工面积的18.2%，距离2020年超过50%的国家规划目标，仍留给市场较大的发展空间。

突发的疫情，带给国人伤痛的同时，也带给社会更多的思考。健康绿色下的建筑设计跃升为大众第一关注点。行业也在人与自然和谐相处的可持续发展道路上砥砺前行。

The development of green building in China started 30 years later than that in foreign countries, and the pace of development has accelerated in recent years. Although the annual growth of green building area is over 20 percent, it will still only account for 18.2 percent of the new construction area in 2019, leaving a large space for the market to develop ahead of the national planning target of more than 50 percent by 2020.

The outbreak of the epidemic has not only brought pain to the people, but also brought more thinking to the society. The health and green building design becomes the first concern of the public, and the industry is forging ahead on the road of sustainable development with harmonious coexistence of man and nature.



• 绿色建筑的发展现状及趋势

Status quo and trend of green building

健康绿色建筑发展加快追赶步伐，力争缩小差距

The development of green buildings will accelerate the pace of catch-up and strive to narrow the gap

绿色建筑在国外发展30年后，中国引入绿色建筑概念。随后20年，中国出台了一系列适应本国国情的绿色建筑标准，在健康绿色建筑发展道路上一路前行，快速追赶，追随国际发展的步伐。

After 30 years oversea development, the concept of green buildings was introduced into China. The following 20 years, China enacts a series of suited standard for green buildings, and moves in the healthy green building development road forward, fast catches up, follows the pace of the international.

美、澳、德、英等国提出"绿色建筑"的概念
The U.S., Australia, German and the U.K. brought out the concept of "Green Building"
1960s
英国发布世界首个绿色建筑评价标准 BREEAM
The U.K. announced world's first standard of green building evaluation, BREEAM
1990
德国建造世界上第一栋被动房试验建筑
Germany built world's first passive house test building
1990s 绿色建筑概念引入中国
The concept of "Green Building" was introduced to China
美国建筑委员会(USGSC)成立
The American Building Committee(USGSC) was established
1993
绿色白宫计划开始实施
The "Green White House" plan took effect
德国成立被动房研究所（PHI）
The PHI was established in German
1996
USGBS发布第一版LEED认证标准
The USGBS published the first edition of LEED Certification Standards
1998
2001 我国第一栋建筑申请LEED认证
A building firstly applied for the LEED Certification in China
2006 我国第一版《绿色建筑评价标准》发布
First edition of <Green Building Evaluation Standards> came out
德国建立第二代绿色建筑认证体系DGNB
The second edition of green building certification system DGNB was established in German
2007
2008 成立中国城市研究会绿色建筑与节能专业委员会
Green building and Energy Conservation Committee of China Urban Science Research Association was established
Delos颁布第一版WELL认证标准
Delos published the first edition of WELL Certification Standard
2013
2013 国务院发布了《国务院办公厅关于转发发展改革委、住房城乡建设部绿色建筑行动方案的通知》
The State Council issued the green building action plan of the development and Reform Commission and the Ministry of housing and urban rural development
2015 WELL标准被引入中国
The WELL Standard was introduced to China
2017 "健康建筑产业技术创新战略联盟" 成立
"China Industry Technology Innovation Strategic Alliance for Healthy Building" ("CHBR") founded
首个《健康建筑评价标准》T/ASC02-2016 发布
"Green Building Evaluation Standard", T/ASC02-2016 , was published
2019 新版《绿色建筑评价标准》GB/T50378-2019发布
New edition of "Green Building Evaluation Standard", GB/T50378-2019, was published
欧盟法令要求28个国家所有新建建筑必须采用被动式建筑
EU law requires all new buildings adapt passive building design the 28 countries
2020
2020 "健康建筑产业技术创新战略联盟" 颁布首部《健康社区评价标准》
CHBR announced the first "Standard of Healthy Community Evaluation"
目标2020年中国新建建筑中绿色建筑面积比例超过50%
Green building will be composed of new construction area for more than 50% in China by 2020

图：国内外绿色建筑发展时间轴

Graph: Green Building Developmen

中国绿色建筑市场仍处于发展阶段，行业发展任重道远

Green building market is still in the development stage, and has a long way to go

从2006年国家第一部《绿色建筑评价标准》发布至今，经历十多年的发展，我国仍是一个新兴发展的绿色建筑市场。2011-2018年期间，绿色建筑项目数量和面积增幅明显，行业渗透率不断提升，但占比仍然不高。截至2018年12月末，绿色建筑面积只占全年新开工面积的18.2%。中国绿色建筑的发展仍任重道远。

根据《建筑节能与绿色建筑发展“十三五”规划》的要求，中国绿色建筑的发展在2016-2020年间要进入“增量提质”的加速期，至2020年，新建建筑中绿色建筑面积比例超过50%。

Since the first National "Green Building Evaluation Standard" was issued in 2006, after more than ten years of development, the green building market of China is still rising. From 2011 to 2018, the number and area of green building projects increased significantly, and the industry penetration rate continued to increase, but the proportion was still low. As of the end of December 2018, green building area accounted for only 18.2% of the new construction area throughout the year. The development of green buildings in China still has a long way to go.

According to the requirement of Building Energy Saving and Green Building Development in 13th FYP, the development of green buildings in China will enter an accelerated period of "quality and quantity improvement" from 2016 to 2020. By 2020, new buildings will constitute over 50% green buildings.

资料来源：中国房地产协会
From: China Real Estate Association

图：2011-2018年中国绿色建筑项目发展情况（单位：个，亿平方米）
Graph: Green Building in China of 2011-2018 (Unit: 100 billion square meter)

标准与时俱进，新国标提升绿色建筑认证门槛，引领绿色建筑质量发展

Standards keep pace with the development, and the new national standard raises the threshold for green building certification, leading the development of green building quality

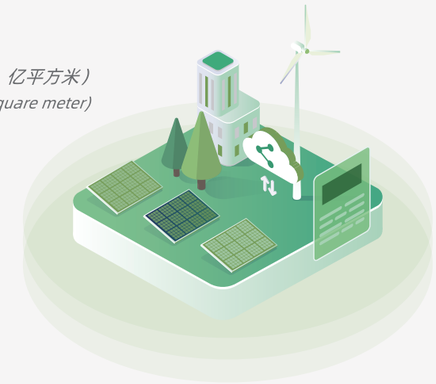
2019年8月1日起正式实施的《绿色建筑评价标准》确立了“以人为本、强调性能、提高质量”的绿色建筑发展新模式，在指标体系上，从“四节一环保”扩充为“基础控制项、安全耐久、健康舒适、生活便利、资源节约、环境宜居、提高与创新”等七大项。新指标体系提高了建筑评价的门槛，从标准上引领行业良性可持续性长期发展。

新版《绿色建筑评价标准》在评价星级方面，新增了基础级，并提升了获取绿色建筑标识的难度。这也从评级标准上引领行业向更高的水准前进。

The new development model of “People Oriented”, “Focus on Function”, “Quality Improvement” has been determined since the issue of “Green building Evaluation Principle” on 1st Aug 2019. The index system broadens from “four conservation and one environmental protection” to seven principles, including “basic control items, safety and durability, health and comfort, convenience, saving resource, liveable environment, improvement and innovation”. The new index system increases the threshold of building evaluation and leads the industry to sustainable long-term development.

The new version of "Green Building Evaluation Standards" has added a basic level in the evaluation of star ratings and made it more difficult to be certificated, which also leads the industry to a higher level in terms of rating standards.

图：《健康建筑评价标准》TI ASC 02 -2016主要内容
Graph: Main Content of “Assessment standard for healthy building”



The physical and mental health issues caused by the living environment have attracted extensive attention from all areas in China. It has become a consensus to eliminate or reduce health risk factors in the living environment and effectively improve the quality of life and national health. Thus, it is urgent to research, evaluate and reduce the health risks of the living environment. " Assessment standard for healthy building" systematically evaluates the environmental factors that affect the health of the residents from the perspective of ensuring the sustainable health of the residents, and meets the multi-level needs of the residents' physiology, psychology, and society; It also creates a healthy, safe, comfortable, and environmentally friendly high-quality houses and communities for the residents.

基于居住者体验的《健康住宅评价标准》是“健康中国”战略的重要内容

“Assessment standard for healthy building” on residents’ experience is crucial to “Health China”

居住环境引起的生理和心理健康问题,已经引起了国内社会各界的广泛重视。消除或降低居住环境中的健康风险因素,有效提高生活质量和国民健康水平已经成为共识。因此,研究、评价和降低居住环境的健康风险迫在眉睫。《健康住宅评价标准》从保障居住者可持续健康效益的角度，系统地评价影响住宅健康性能的环境因素，满足居住者生理、心理和社会多层次的需求，为居住者营造一处健康、安全、舒适和环保的高品质住宅和社区。

• 不同视角下的“健康、舒适生活“

“Health and comfort” in different perspectives

在大众看来，健康、舒适的生活是由人，从自我的由内而外，和外在的物，食物、居住环境共同构建的。它能同时从生理和心理的角度使人保持健康活力、舒适自在的生活状态。

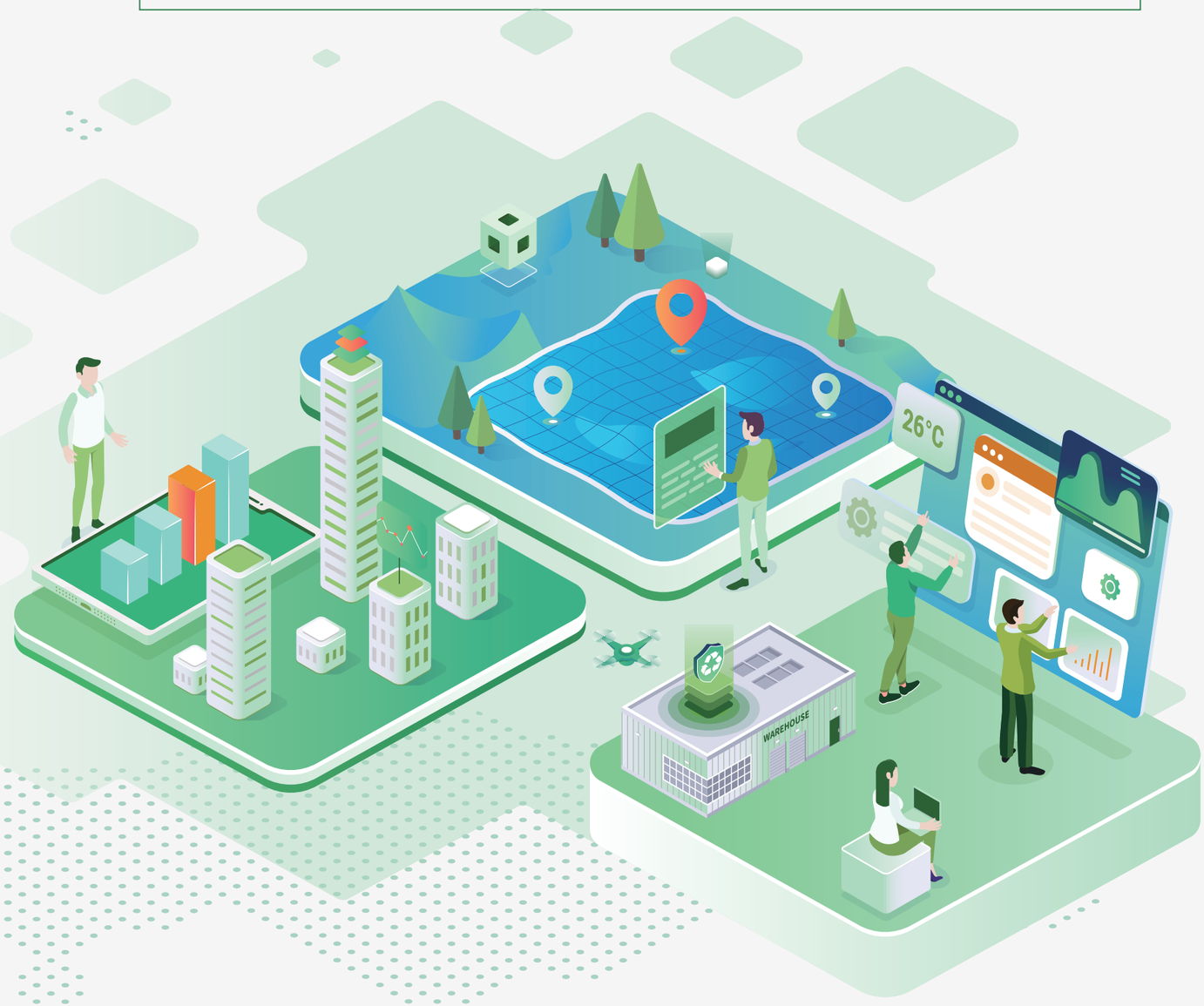
For the public, healthy and comfortable life is composed of human, the self from the inside to the outside, and the external objects, including food and residential environment. It can keep human-beings stay in a healthy, energetic, comfortable, and free lifestyle physically and mentally.

从专家的角度来看，健康、舒适是人们在感受到“安全”后，更高层级的追求，是人与自然和谐相处的可持续发展的需要。其必备要素包括：空气好、化学污染少、噪音低、光照合适、水质好、生物污染少、温度适宜、湿度适宜、电磁辐射少。

In the view of experts, health and comfort are people's pursuit of a higher level after they feel "safe", and they are also the needs for the sustainable development that is a harmonious coexistence between man and nature. The key element includes clean air, less chemical pollution, less noise, suitable illumination, high water quality, less biological pollution, suitable temperature, suitable humidity, and less electromagnetic radiation.

综合大众及专家的意见，本次研究中，我们选取了空气质量、热湿环境、声环境、光环境、人文空间环境以及水品质等六大元素进行监测评估，旨在发现提升大众居住健康舒适的改善因子。

Basing on the opinions of the public and experts, in this study, we selected six elements to monitor and evaluate: air quality, heat and humidity environment, sound environment, light environment, humanity environment, and water quality, which is only to find the factors to improve the health and comfort of living for the public.



2 DEMAND OBSERVATIONS 需求观察

需求观察：想说爱你不容易

Demand Observations: “It is not easy to say love you”

不断升级的居住质量需求与行业发展的缓慢进度，造成了大众期望与实际体验之间的落差。装修升级和设备购买的自我改善方式，难以从根本性解决依然存在的困扰。空气中灰尘感/颗粒感（PM2.5）、室内湿度不均衡、室外噪音和水垢依然困扰着大众的日常生活，也颇具地域属性。

幅员辽阔的中国造就了不同的气候与经济发展不平衡性，也带来了区域之间居住健康舒适的不同困扰。经济水平及房地产开发企业的聚集性一定程度上带给了当地居民更为丰富的视角及期待，但也造成了对于室内健康舒适的现实状况更多的不满情绪。

The continuous upgrading demand for living quality and slow development of the industry caused the gap between public expectation and actual experience. Though decoration and equipment are improving, the underlying trouble cannot be eliminated fundamentally. Dust, PM2.5, humidity imbalance, outdoor noise, and water scale are still troubling the public life, which also have regional characteristics.

The vast territory of China creates the differences in climate and imbalances of economic development. It also brings different health & comfort concerns to residents among different regions. The discrepancy of economic level and agglomeration degree of real estate enterprises brings more perspectives and expectations to the residents to some degree, but it also causes more dissatisfaction with the reality of health & comfort living conditions.

疫情后，大众的购房需求

Public demand for housing after the epidemic

疫情后，大众购房更加关注绿色、健康和安全

After the epidemic, people focus more on green, health and safety part of houses

新冠疫情的爆发，使人们对居家生活健康性、安全性和舒适性的诉求越来越强烈。疫情之下，人们在加强个人防护的同时，也更加重视住宅的卫生防疫和健康安全。家，这个温暖的港湾，为我们筑起了疫情防控的第一道防线。如何打造健康绿色的家园，也一跃成为居民、行业和社会关注的焦点。

With the outbreak of the COVID-19, health, safety and comfort play an increasingly important role in people’s view of housing. Under epidemic, not only did people strengthen personal protection, but also pay more attention to the health and safety of housing. Home, a warm harbor, has built the first line of defense for us. The way to build a healthy and green home has become the focus of community, industry, and society.

图：疫情后消费者未来购房关注点

Graph: Consumer's focus of future house purchase after epidemic

大众居住现状评价

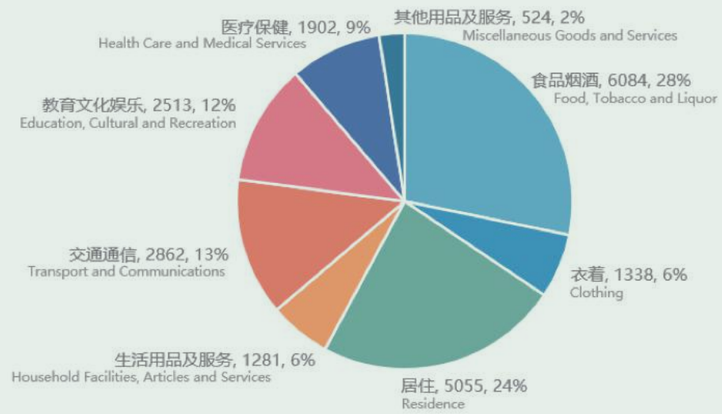
Public evaluation of living status

消费升级提高了大众对居住的品质要求，对现状的不满感增强

After the epidemic, people focus more on green, health and safety part of houses

根据国家统计局发布数据：2019年，全国居民人均可支配收入30733元，比上年名义增长8.9%，扣除价格因素，实际增长5.8%。人均消费支出21559元，比上年名义增长8.6%，扣除价格因素，实际增长5.5%。其中，人均居住消费支出5055元，增长8.8%，占人均消费支出的比重为23.4%，仅次于食品烟酒消费支出，占据了中国居民消费支出的第二位；高支出的背后，也传递了大众对于美好居住环境的渴望。

According to the data released by the National Bureau of Statistics: in 2019, the per capita disposable income of national residents was 30733 yuan, a nominal increase of 8.9% over the previous year, and the actual increase was 5.8% after deducting price factors. The per capita consumption expenditure was 21559 yuan, a nominal increase of 8.6% over the previous year. After deducting the price factor, the actual increase was 5.5%. Among them, the per capita residential consumption expenditure was 5055 yuan, an increase of 8.8%, accounting for 23.4% of the per capita consumption expenditure, following to the food, tobacco and alcohol consumption expenditure, occupying the second-largest consumption expenditure of Chinese residents. Behind the high expenditure, it also conveys the public's desire for a better living environment.



图：2019年全国居民人均消费支出及构成（单位：元）

Graph: The consumption expenditure and composition per capita in 2019 (unit: yuan)

2019年，大众对室内居住环境健康舒适体验满意度为56，相较18年略有下降。随着大众消费和知识结构的升级，大众对室内居住舒适体验的期望不断攀升，而实际体验与期望之间的落差感，导致了大众体验满意度的下降。

In 2019, the public's satisfaction index with the health and comfort experience of the indoor living environment is 56, which is slightly lower than that in 2018. With the upgrading of consumption and knowledge, the public's expectation of comfortable living experience is rising. However, the gap between actual experience and expectation leads to the decline of public satisfaction.

在我们关注的六大要素中，室内声环境、光环境和人文空间的体验满意度下降幅度较大；室内热湿环境和声环境的体验满意度较去年无明显变化，依然处于低位。

Among the six major factors we concentrate on, the satisfaction of indoor sound environment, light environment, and humanity environment decrease significantly; the satisfaction index of indoor thermal environment and sound environment has no significant change compared with the previous year and is still at a low level.

图：不同模块健康舒适体验评价指数

Index of Heath & Comfort Experience of Different Modules

• 困扰大众居住体验的主要因素

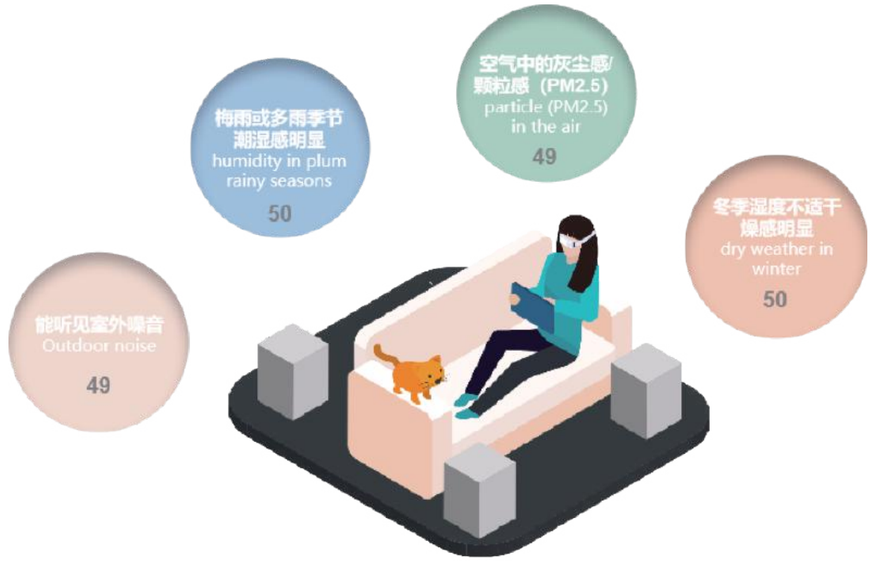
Main factors plague the public

空气中的PM2.5、湿度不均衡和室外噪音依然是困扰大众的主要问题

PM2.5 & Humidity Imbalance & Outdoor Noise are still the main problems troubling the public

建筑对空气污染物的阻隔效率不高以及空气净化器等设备改善效果有限，造成室内空气中灰尘感与颗粒感（PM2.5）明显；
受到建筑材料隔音降噪性能和建筑密度的影响，使大众在室内受到噪音的干扰；
区域性与季节性因素所导致的室内环境干燥、潮湿问题也困扰了大众的居住体验。

Low efficiency of the buildings to block air pollutants and limited effect of air purifiers result in obvious dust and particle sense (PM2.5) in the indoor environment;
Due to the limitation of building material to insulate sound, the public are disturbed by noise from outside;
The dry or humid indoor environment caused by regional and seasonal factors has also troubled the public's living experience.



• 大众改善居住体验的主要行动

Main action for improving the living experience

大众在改善居住环境方面一直在行动，尤其致力改善空气和热湿环境

The public has been taking action to improve the living environment, especially the air quality and thermal environment

为了改善室内居住环境，提升居住品质，大众采取了不同的措施。本次调研中，超九成的受访者表示曾购买过与改善居住环境相关的设备。在已购买的设备中，改善空气质量的空气净化器、改善湿热环境的变频空调最受青睐。

To improve the indoor living environment and the quality of living, the public has taken different methods. In this survey, over 90% of the respondents said they had purchased equipment related to improving the living environment. Among the purchased equipment, air purifiers that improve air quality and inverter air conditioners that improve the humid and hot environment are the most popular.

图：2019年大众已采取的改善居住环境的措施
Graph: Measures Taken by the Public to Improve Housing Experience

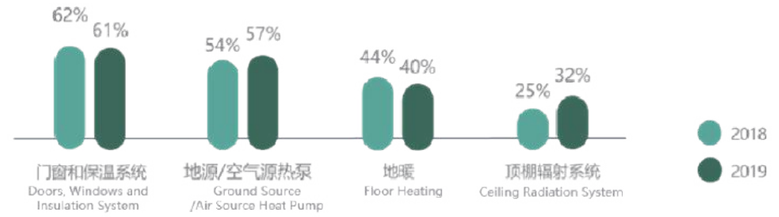
图：2019年大众已购买的改善居住环境的设备比例
Graph: Proportion of the Equipment Purchased by the Public to Improve Housing Experience in 2019

除了后期设备购买，装修方案设计对改善居住体验的作用不可小觑

In addition to the purchase of equipment, the effect of decoration scheme on improving the living experience should not be underestimated

大众在房屋装修时，非常看重装修方案对未来生活带来良好的居住体验感。2019年，大众在设计装修方案与选材时，门窗和保温系统依然是主流偏好，但对地源/空气源热泵和顶棚辐射系统的关注度也有所上升。

When people decorate their houses, they place a great emphasis on future living experience brought by decoration plan. In 2019, the public still pay more attention on doors and windows and thermal insulation systems when designing decoration schemes and selecting materials, but they also increase the attention on GSHP and ceiling radiation systems.



图：2018-2019年大型装修时最有意向购买的设备或方案
Graph: preferred equipment or strategies in large-scale decorations in 2018-2019

家居设备需求升级，智能化提升了大众的居住品质

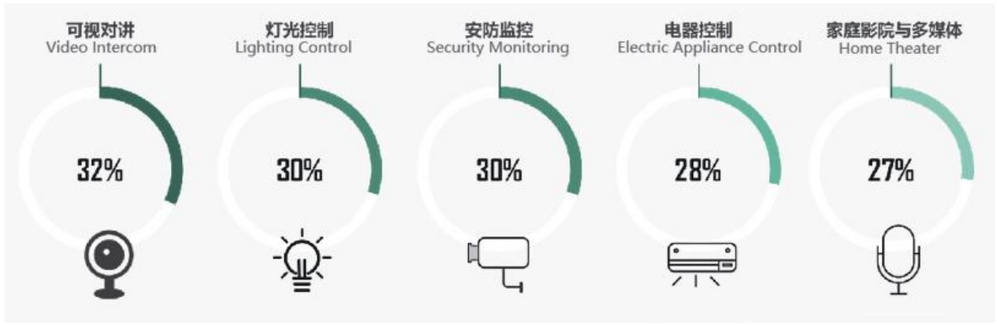
Home devices demand upgraded, and intelligent devices improved the living quality of the public

当前，84%的大众已拥有至少1件智能化家居，拥有比例较去年增加了4%，其中，在一年内有意愿再次购买的占比41%；16%的大众暂未拥有智能化家居，在一年内有意愿购买的占比69%。

Currently, 84% of the public already own at least one smart device about home, an increase of 4% compared with last year, and 41% are willing to buy again within a year; 16% of the public do not have a such device yet. Within a year, 69% of them are willing to buy.

大众对具备可视对讲、灯光控制、安防监控、电气控制、家庭影院与多媒体功能的智能家居设备拥有率较高。

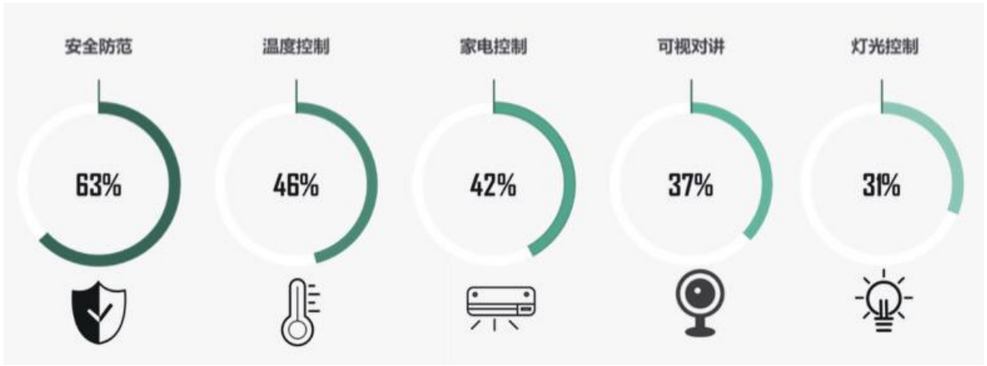
The public owns a high rate of smart home devices with video intercom, lighting control, security monitoring, electrical control, home theater and multimedia functions.



图：2019年大众购买的智能家居产品具备的主要功能
Graph: Main Functions of Smart Home Appliances Purchased by the Public in 2019

大众对智能家居设备安全防范、温度控制、家电控制、可视对讲、灯光控制等功能的需求更加强烈.

The public demand for security, temperature control, home appliances control, visual intercom, light control of smart home equipment is more intense.



图：2019年大众对智能家居产品功能的需求
Graph: Demand for Smart Home Appliances in 2019

• 区域体验评价差异

Different evaluation by different regions

只有懂得，才能给予，需求因区域而异

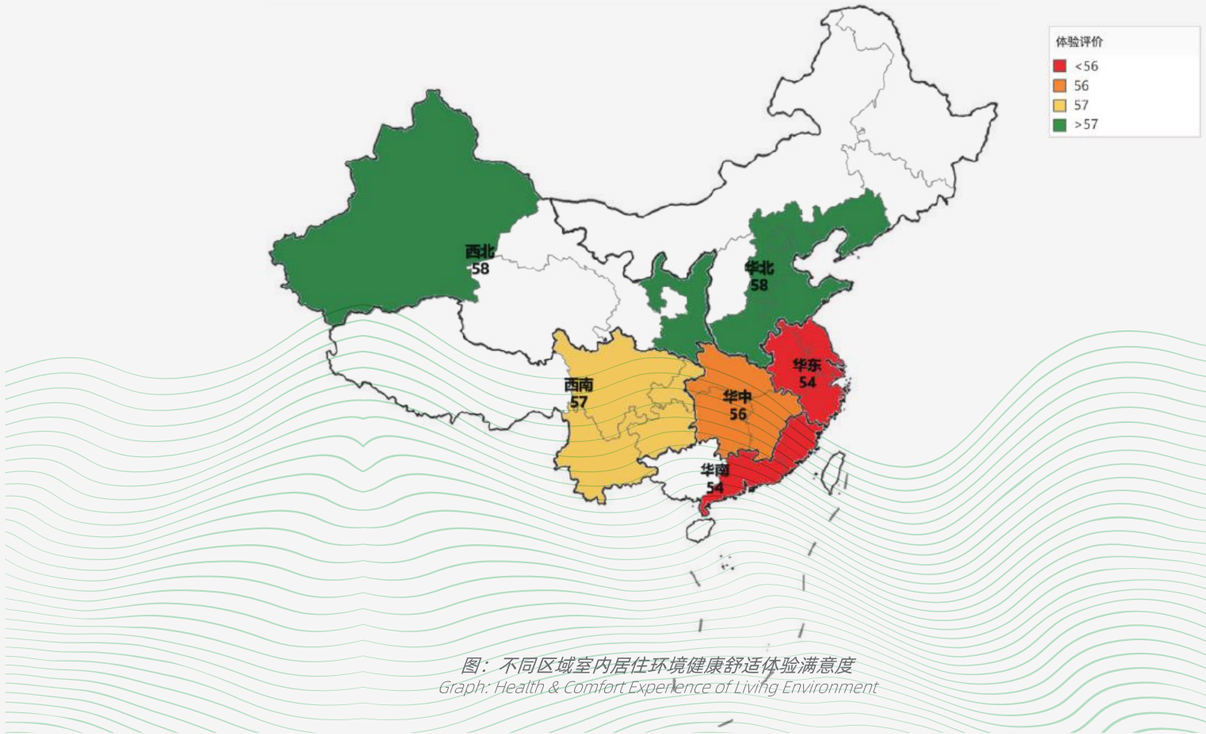
Understanding can provide the need, and demand varies from region to region

整体来看，华北、西北区域的大众体验满意度最高，其次为西南和华中，华东和华南区域大众体验满意度最低。居民对生活质量的要求和经济发展程度成正相关，经济越发达的地区，居民对居住品质的要求相对更高，同时对现状改进和追求更高生活质量的期望也更高。

从中国房地产的区域分布来看，2020中国房地产开发企业500强主要集中在华东以及华南区域，其次主要分布在华北和华中区域。激烈的竞争下，高聚集度的地区，开发商需要更加努力的传递产品品质以及服务能力， 也培养了普通大众更加成熟的辨识能力。

Overall, people from North and Northwest have the highest satisfaction, followed by Southwest and central part, and people from East and South have the lowest satisfaction. The more developed the economy is, the higher the requirements for the living quality and the higher the expectation for a higher quality of life are.

From the distribution of China's real estate, the top 500 real estate enterprises in 2020 are mainly concentrated in East and South, followed by North and Central. Under the fierce competition, developers in high concentration areas need to make more efforts to deliver product quality and service ability, and cultivate the identification ability of the general public.



图：不同区域室内居住环境健康舒适体验满意度
Graph: Health & Comfort Experience of Living Environment

空气质量：华北和西北区域空气改善明显，满意度最高。

Air quality: North and Northwest has obvious improvement with the air quality

空气是人类懒以生存的根本。空气质量更是牵动了大众的心。华北地区和西北地区经过近几年的治理，空气质量体验满意度获得了较好的表现，其他地区则仍需继续努力。大众普遍认为空气中的灰尘感/颗粒感（PM2.5）是影响空气质量的主要原因。其次，室内建筑材料散发出的挥发性气味，以及做饭、吸烟人群、宠物等所产生的异味，都是影响室内空气质量的因素。

Air is the foundation of human beings' survival. The air quality has touched the hearts of the public. After governance in North and Northwest in recent years, air quality experience satisfaction has achieved good performance, but other regions still need to continue their efforts.

The public generally believe that the dustiness/graininess (PM2.5) in the air is the main reason that affects air quality. Secondly, the volatile odors emitted by indoor building materials, as well as the odors generated by cooking, smoking people, pets, etc., are all influencing factors for indoor air quality.

热湿环境：桑拿天和梅雨季带来的热湿更让人无法忍受， 华东和华南区域居民心里苦。

Hot and humid environment: eastern and southern residents have a tough time in summer

大众对于热湿环境的感知呈现出明显的区域性和季节性差异。华北和西北地区的居民认为冬季的干燥感是造成其室内舒适感降低的主要因素，而华东和华南地区居民则广泛认为受到了夏季闷热感，以及梅雨季节潮湿感的影响。

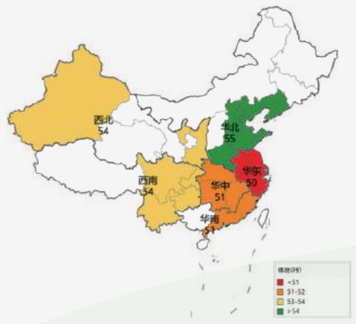
The public's perception of the hot and humid environment shows obvious regional and seasonal differences. Residents in North and Northwest believe that the dryness in winter is the main factor that reduces their indoor comfort, while residents in East and South are widely believed to be affected by the summer sultry heat and the rainy season wetness.

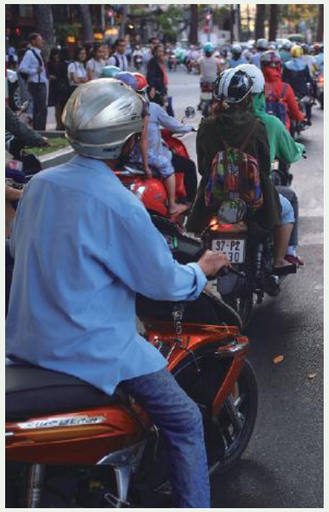
声环境：远离噪音污染，还我一片安静的空间，是大众的心声。

Acoustic environment: People want a quiet space and stay away from the noise pollution

在大众居住体验的六大模块中，声环境模块体验满意度最差。随着中国城市化进程的快速发展， 大众普遍受到室外噪音的干扰。同时， 室内家电噪音问题、邻里噪音也是华东和华南区域居民面临的主要困扰。

Among the six modules of the public living experience, the acoustic environment module has the worst experience satisfaction. With the rapid development of China's urbanization process, the public is generally disturbed by outdoor noise. At the same time, the noise problem of indoor appliances and neighborhood noise are also the main problems faced by residents in East and South.





光环境：拒绝各种光照不适，西南的阳光太珍贵，华南和华东受室外光污染困扰。

Light environment: Southwest cherish the sunlight, but South and East are plagued

大众光环境体验满意度相比去年有所下降，室外光污染（如大面积玻璃幕墙造成的反光、霓虹灯等）和室内人工照明条件不适宜是影响大众光环境体验满意度的主要因素。

Satisfaction of light environment experience has decreased compared with last year. Outdoor light pollution (such as reflections caused by large-area glass curtain walls, neon lights, etc.) and unsuitable indoor artificial lighting conditions are the main factors affecting public light environment experience satisfaction.

水品质：水是生命之源，对于饮水，我们一直都很重视。华北区域水质不佳、水口感差，华南区域水杂质多。

Water quality: Water is important! North and South needs water with greater quality

大众对水品质的满意度较去年有所下降，影响水品质体验感的主要因素依然是水垢。

华北区域因为地理位置及工业化的发展造成的水质钙镁含量比较高的问题，长期以来一直困扰着华北大众的日常生活。水质清洁和口感无异味成为了大众最朴素的追求。同样的问题也困扰着华南区域的大众生活。

Public satisfaction with water quality has declined compared to last year, and the main factor affecting water quality experience is still scale.

The problem of high calcium and magnesium content in water in North due to the geographic location and industrialization has long plagued the daily lives of people in North. Clean and taste-free water has been the simplest pursuit of the public. The same problem has plagued the public life in South.

人文空间环境：居住空间与色调的舒适，华南区域居民一个也不能少。

Humanistic space environment: every southern resident needs a space

大众在人文空间环境模块的体验相比去年下降明显，大众满意度由64下滑至61。

华南、华东和西南区域居民所面临的主要问题是室内空间面积不适宜（过于拥挤或过于空旷），华南地区居民还认为室内空间色调不舒适，影响了室内人文空间环境的体验。

Compared with last year, the experience of the public in the human space environment module has dropped significantly. Public satisfaction declined from 64 to 61.

The main problem faced by residents in South, East, and Southwest is that the area of indoor space is not suitable (too crowded or too empty). Residents in South also think that the color of indoor space is uncomfortable, which affects the experience of indoor human space environment.

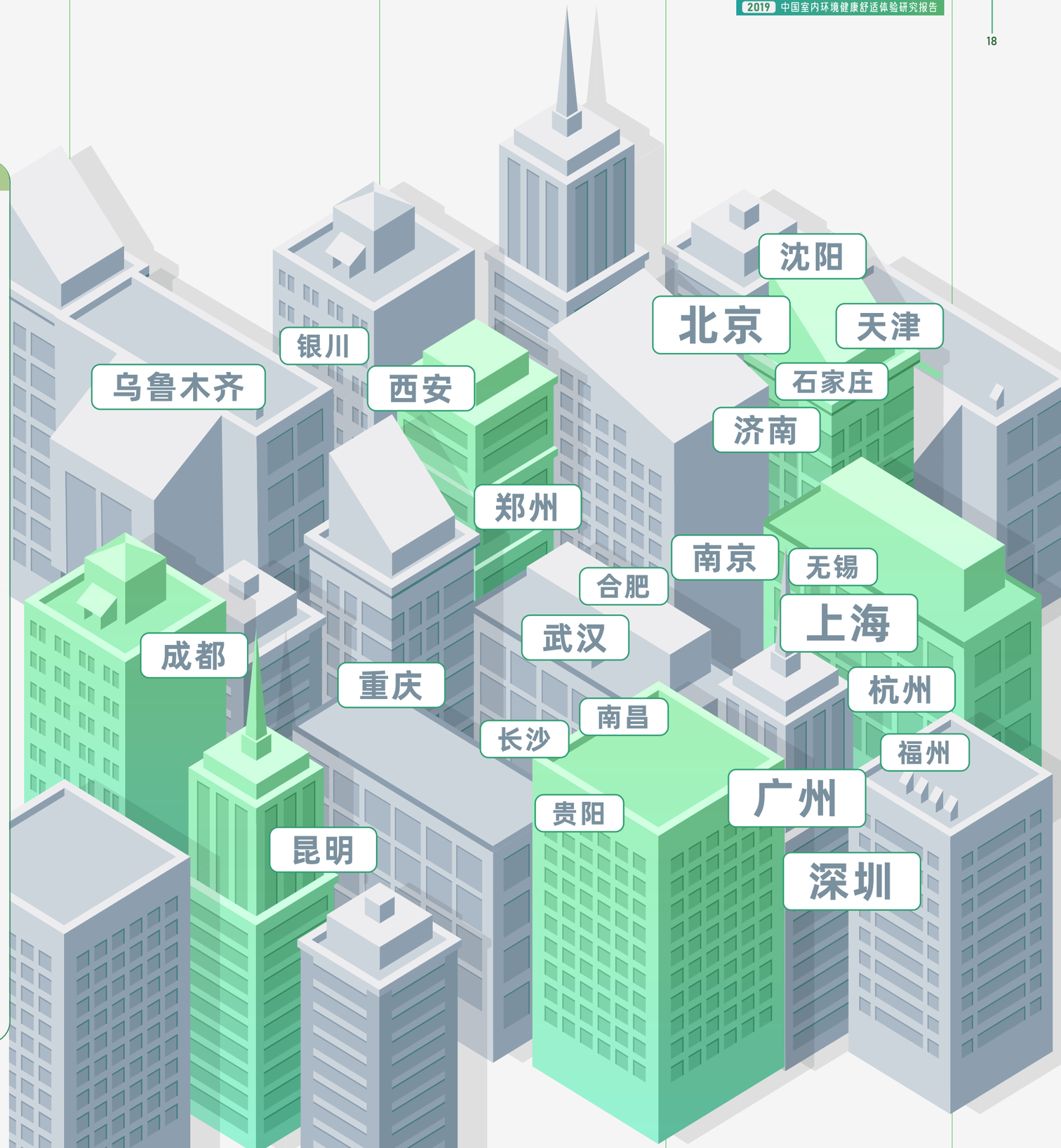
3 EXPERIENCE IN CITIES
城市体验

幸福总是相似的，不幸的城市有各自的不幸
Satisfaction is similar, dissatisfaction is different.

受到城市建筑发展阶段、经济发展水平和人文空间环境的影响，大众对城市健康舒适的体验满意度差异性明显。不同城市影响大众健康舒适体验的因素有所差异。华北和西北地区的大部分城市大众体验满意度较高，华东和华南地区的大部分城市大众体验满意度低。

Affected by the urban construction development stage, economic development level and humanistic space environment, the public's satisfaction with urban health and comfort experience is significantly different. Different cities have different factors influencing public health and comfort experience. Most cities in North and Northwest have higher satisfaction, while most cities in East and South have lower experience satisfaction.

图：不同地区城市体验评价指标数值
Graph: Index of Living Experience in Different Cities



天津

行进中的宜居城市，但仍需改善水质问题

Tianjin: a city which is moving forward, but its water quality needs to be improved

天津作为京津冀城市圈中重要一环正在打造宜居的城市名片。
凭借天然的地理优势、政府的鼓励政策及天津人乐观包容的人文特征，天津室内居住环境健康舒适体验综合评价指数63，比全国平均指数56高7个点。
在声环境、人文空间、热湿环境方面评价指数远远领先全国各分项均值。但京津地区的水质偏硬，水垢仍是困扰天津人的主要问题。

As an important part of the Beijing-Tianjin-Hebei urban circle, Tianjin is building a livable city impression.
Relying on its natural geographical advantages, the encouragement policies of governments, and the optimistic and tolerant humanistic characteristics of Tianjin people, the comprehensive evaluation index of Tianjin indoor living environment health and comfort experience is 63, which is 7 points higher than the national average index which is 56.
The evaluation index in terms of acoustic environment, humanistic space, and hot and humid environment is far ahead of the national average. However, the water quality in Beijing-Tianjin area is relatively hard, and scale is still the main problem that troubles Tianjin people.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【62】	↑	5
湿热环境 Thermal Environment	【62】	↑	9
声环境 Sound Environment	【62】	↑	10
光环境 Light Environment	【65】	↑	5
人文空间 Humanity Environment	【72】	↑	11
水品质 Water Quality	【61】	↑	4

济南

山水泉城，舒适宜居，持续攻坚水品质

Jinan: Livable city but water quality needs improvement

2019年济南室内居住环境健康舒适体验综合评价指数61，优于全国均值5个点，其中人文环境和光环境较全国分项均值高6个点。基于排涝功能差，河污染等历史问题影响，水垢是济南目前需要持续改善的板块。

In 2019, the comprehensive evaluation index of Jinan's indoor living environment health and comfort experience is 61, which is better than the national average of 5 points. In the evaluation, the human environment and light environment are 6 points higher than the national average. Due to the impact of historical problems such as poor drainage and river pollution, scale part needs continuous improvement in Jinan currently.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【62】	↑	5
湿热环境 Thermal Environment	【58】	↑	5
声环境 Sound Environment	【55】	↑	3
光环境 Light Environment	【66】	↑	6
人文空间 Humanity Environment	【67】	↑	6
水品质 Water Quality	【58】	↑	1

银川

辽阔苍茫，沙漠间的天堂

Yinchuan: A vast city, the heaven on desert

银川地广人稀，西北大气苍茫，辽阔的风格，塑造了良好的人文空间体验。室内居住环境健康舒适体验综合评价指数61，高于全国水平5个点，各模块体验感均高于平均水平。
城市全面推行“以克论净”的城市保洁模式，2019年，全市优良天数324天，达标率88.88%（未扣除沙尘天气），同比增加28天。
水品质方面，城镇污水处理工作位列全国36个重要城市前五、西北第一。
受到室外噪音的干扰，造成在声环境体验满意度上落后其他指标，但同样领先于全国。

Yinchuan has a sparse population, a vast atmosphere in the northwest, and a vast style, which has shaped a good humanity environment experience. The comprehensive evaluation index of indoor living environment health and comfort experience is 61, which is 5 points higher than the national level, and the experience of each module is higher than the average level.
The city fully implements the "cleaning with the gram" urban cleaning model. In 2019, the city had 324 excellent days, with a compliance rate of 88.8% (excluding sand and dust weather), a year-on-year increase of 28 days.
In terms of water quality, urban sewage treatment ranks among the top five in 36 important cities nationwide and the first in the northwest.
Disturbed by outdoor noise, the satisfaction of the acoustic environment experience lags behind other indicators in, but also leads the country.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【61】	↑	4
湿热环境 Thermal Environment	【59】	↑	6
声环境 Sound Environment	【58】	↑	6
光环境 Light Environment	【63】	↑	3
人文空间 Humanity Environment	【66】	↑	5
水品质 Water Quality	【63】	↑	6

昆明

四季如春，舒适宜居

Kunming: Spring life, comfortable and liveable

依托天然优势和良好管控与治理，昆明营造了良好的生态环境，舒适宜居，其室内居住环境健康舒适体验综合评价指数61，高于全国平均水平5个点，特别是在声环境和空气质量体验满意度方面，领跑全国。
2019年，昆明市空气质量在全国168个城市中排名第15名、在全国的省会城市中排第5名。

Relying on natural advantages and good control and governance, Kunming has created a good ecological environment, comfortable and livable, and its indoor living environment health and comfort experience comprehensive evaluation index is 61, which is 5 points higher than the national average, especially in acoustic environment and air quality. In terms of experience satisfaction, it leads the country.
In 2019, Kunming's air quality ranked 15th among 168 cities nationwide, and ranked 5th among capital cities nationwide.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【63】	↑	6
湿热环境 Thermal Environment	【57】	↑	4
声环境 Sound Environment	【60】	↑	8
光环境 Light Environment	【63】	↑	3
人文空间 Humanity Environment	【62】	↑	1
水品质 Water Quality	【62】	↑	5

沈阳

改变中的老工业基地，急需解决外部噪音隔离问题
Shenyang: Developing old industry center, noise is the problem

沈阳，正致力于为居民创造良好的宜居环境。室内居住环境健康舒适体验综合评价指数60，高于全国平均水平4个点。
2019年，沈阳市城市环境空气质量优良天数为284天，占全年总天数的77.8%，环境空气中的PM2.5、二氧化硫、二氧化氮平均浓度同比下降，空气质量得到极大的改善。
但城市生活的噪音及房屋构造的隔音处理尚不理想，室外噪音仍是困扰沈阳居民的主要问题。

Shenyang is dedicating to creating a good livable environment for residents. The comprehensive evaluation index of indoor living environment health and comfort experience is 60, which is 4 points higher than the national average.
In 2019, the number of days with excellent ambient air quality in Shenyang was 284 days, accounting for 77.8% of the total days of the year. The average concentration of PM2.5, sulfur dioxide, and nitrogen dioxide in the ambient air decreased year-on-year, and the air quality has been greatly improved.
However, the noise of urban life and the sound insulation of the house structure are not ideal. Outdoor noise is still the main problem that plagues Shenyang residents.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【61】	↑	4
湿热环境 Thermal Environment	【58】	↑	5
声环境 Sound Environment	【56】	↑	4
光环境 Light Environment	【65】	↑	5
人文空间 Humanity Environment	【65】	↑	4
水品质 Water Quality	【59】	↑	2

杭州

朦胧烟雨城，人间天堂，热湿问题需改善
Hangzhou: Livable paradise, humidity problem needs to be improved

杭州持续经济跃升和本土文化造就了当地居民对居住品质要求较高。
钱塘江的改善，西湖的改造，西溪湿地的建设，都彰显了杭州政府努力提供优美环境的努力和决心。
在本次调研中，杭州室内居住环境健康舒适体验综合评价指数58，略高于全国水平2个点，除了空气中的灰尘与颗粒、冬季温度仍需改善外，宜居的杭州获得大众青睐。

he continuous economic leaps of Hangzhou and the local culture have shaped residents who have high requirements for living quality.
The improvement of the Qiantang River, the renovation of the West Lake, and the construction of the Xixi Wetland all demonstrate the efforts and determination of the Hangzhou government to provide a beautiful environment.
In this survey, comprehensive evaluation index of indoor living environment health and comfort experience in Hangzhou is 58 which is slightly higher than the national level by 2 points. In addition to the dust and particles in the air and the winter temperature still needs to be improved, the livable Hangzhou is popular among the public.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【56】	↓	-1
湿热环境 Thermal Environment	【52】	↓	-1
声环境 Sound Environment	【54】	↑	2
光环境 Light Environment	【62】	↑	2
人文空间 Humanity Environment	【66】	↑	5
水品质 Water Quality	【64】	↑	7

南昌

山水之城，面临声环境和水品质双重考验
Nanchang: Mountain city, but noise and water are the problems

南昌四季特征明显，带来较好的空气质量体验，室内居住环境健康舒适体验综合评价指数56，略优于全国1个点。
但南昌同样梅雨天潮湿阴冷，冬季无供暖，室内温度不适，影响了南昌居民的热湿体验满意度。
声环境方面，居民受到建设施工和机动车辆噪音的干扰，室外噪音影响了声环境体验满意度，且低于全国分项均值2个点。

Nanchang has distinguished characteristics for each season, which brings better air quality experience. The comprehensive evaluation index of indoor living environment health and comfort experience is 56 that is 1 point better than the average of the country.
However, Nanchang is also humid and cold in rainy days, there is no heating system in winter, and the indoor temperature is uncomfortable, which affects the satisfaction of Nanchang residents' hot and wet experience.
In terms of acoustic environment, residents are disturbed by construction and motor vehicle noise which affects their satisfaction with acoustic environment experience, which is 2 points lower than the national average.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【61】	↑	4
湿热环境 Thermal Environment	【58】	—	0
声环境 Sound Environment	【56】	↓	-2
光环境 Light Environment	【65】	↑	2
人文空间 Humanity Environment	【65】	↑	5
水品质 Water Quality	【59】	↑	2

北京

欣欣向荣的首都，水质问题突出
Beijing: The prosperous capital with outstanding water quality problem

2019年，北京市大气环境中细颗粒物(PM2.5)同比明显改善，PM2.5年平均浓度下降17.6%，全年空气质量优良天数为240天，占比65.8%，空气质量得到较大改善。
北京室内居住环境健康舒适体验综合评价指数57，仅高于全国水平1个点，但光环境提升了5个点，室外光线充足、室内照明适宜是主要原因。
但是，北京没有天然湖泊资源，水质硬，水杂质和水垢多，水口感差，水品质体验下降了6个点。
并且，作为全国人口超大型城市，居住拥挤感强，人文空间的体验感也下降了一个点。

In 2019, the fine particulate matter (PM2.5) in Beijing's atmospheric environment improved significantly year-on-year. The average annual PM2.5 concentration decreased by 17.6%. The number of days with excellent air quality throughout the year was 240 days, accounting for 65.8%. The air quality was greatly improved.
The comprehensive evaluation index of Beijing indoor living environment health and comfort experience is 57 that is only one point higher than the national average, but the light environment has been improved by five points, and sufficient outdoor light and suitable indoor lighting are the main reasons.
However, Beijing has no natural lake resources. The water is hard, and there are many water impurities and scale, and the taste of the water is poor, which causes the water quality experience to drop by 6 points.
In addition, as a large-scale city with a large population in the country, there is a strong sense of crowded living, and the sense of experience of the humanistic space has also dropped by one point.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【59】	↑	2
湿热环境 Thermal Environment	【54】	↑	1
声环境 Sound Environment	【54】	↑	2
光环境 Light Environment	【65】	↑	5
人文空间 Humanity Environment	【60】	↓	-1
水品质 Water Quality	【51】	↓	-6

西安

发展中的古都，室外噪音亟需解决

Xi'an: Ancient city, outdoor noise problem needs to be improved

西安室内居住环境健康舒适体验综合评价指数57，略优于全国。
作为国际性综合枢纽城市，西安在室外噪音方面体验满意度低于全国平均水平。
水品质相较去年有所提升，但低于全国平均水平，尤其在水垢方面体验满意度最低。

The comprehensive evaluation index of the healthy and comfortable experience of indoor living environment in Xi'an is 57 which is slightly better than that of the whole country.
As an international comprehensive hub city, Xi'an's experience satisfaction with outdoor noise is lower than the national average.
The water quality has improved compared with last year, but it is lower than the national average; especially in terms of scale, the experience satisfaction is the lowest.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【59】	↑	2
湿热环境 Thermal Environment	【55】	↑	2
声环境 Sound Environment	【53】	↑	1
光环境 Light Environment	【61】	↑	1
人文空间 Humanity Environment	【61】	—	0
水品质 Water Quality	【55】	↓	-2

成都

天府之城，重点关注声环境和热湿环境

Chengdu: Paradise City which needs to focus on the improvement of sound and humid environment

成都室内居住环境健康舒适体验综合评价指数57，略优于全国。相对来说水品质得到较大改善，声环境体验感较低。
在声环境方面，2019年各功能区监测显示夜间达标率下降，居民反映急需改善。
2019年成都发动治污还绿、造林添绿、改革催绿行动，首次消除重度污染天，首次全面消除国、省考核劣V类断面。
通过对河渠污染、黑臭水等问题持续整改、治理，水环境质量创“十三五”以来最好水平。

The comprehensive evaluation index of healthy and comfortable experience of indoor living environment in Chengdu is 57 which is slightly better than that of the whole country. Relatively, the water quality has been greatly improved, and the sound environment experience is relatively low.
In terms of acoustic environment, the monitoring of various functional areas in 2019 showed that the compliance rate at night had fallen, and residents reported that they needed to improve urgently.
In 2019, Chengdu launched actions to control pollution and return green, afforestation and greening, and promote greening reform.
Through continuous rectification and treatment of river canal pollution, black and stinky water and other issues, the quality of the water environment has reached the best level since the 13th Five-Year Plan.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【57】	—	0
湿热环境 Thermal Environment	【54】	↑	1
声环境 Sound Environment	【53】	↑	1
光环境 Light Environment	【62】	↑	2
人文空间 Humanity Environment	【62】	↑	1
水品质 Water Quality	【58】	↑	1

乌鲁木齐

发展中的亚心之都，着力提升声环境

Urumqi: The center of Asia, improve the sound environment.

乌鲁木齐有“亚心之都”的称呼，室内居住环境健康舒适体验综合评价指数57，优于全国平均数1个点。
但伴随城市化进程不断加快，道路施工和交通密集，噪音污染加剧，室外噪音为主要问题。其次是光环境，室外照明影响大。

Urumqi is called "the capital of Asia", and the comprehensive evaluation index of indoor living environment health and comfort experience is 57 points, which is one point better than the national average. However, as the urbanization process continues to accelerate, road construction and traffic are intensive; noise pollution intensifies; and outdoor noise is the main problem. Secondly, for light environment, outdoor lighting has a great impact.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【57】	—	0
湿热环境 Thermal Environment	【55】	↑	2
声环境 Sound Environment	【53】	↑	1
光环境 Light Environment	【59】	↓	-1
人文空间 Humanity Environment	【65】	↑	4
水品质 Water Quality	【58】	↑	1

郑州

绿城商都，快速前行的中原城市，改善热湿体验

Zhengzhou: Green city with fast pace of development, improve the humid and hot environment

郑州市自2017年底开始新建民用建筑全面执行绿色建筑标准，提升空气质量。
2019年在168个城市中空气质量排名46位，室内居住环境健康舒适体验综合评价指数56，与全国持平。
郑州冬季干燥，冷热交替频繁，热湿环境体验感较差。
其次，人文空间方面低于全国平均水平3个点，尤其在空间环境色调方面，受访者均表示舒适体验度不高。光环境主要体现在室内照明强度不适宜。

Since the end of 2017, Zhengzhou City has newly built civil buildings to fully implement green building standards and improve air quality.
In 2019, it ranks 46th among 168 cities in air quality, and the comprehensive evaluation index of indoor living environment health and comfort experience is 56, which is the same as that of the whole country.
Zhengzhou is dry in winter, alternating cold and hot frequently, and the experience of hot and humid environment is poor.
Secondly, the humanity environment is 3 points lower than the national average. Especially the hue of space environment, the respondents all said that the comfortable experience is not high. The light environment is mainly expressed in the inadequate indoor lighting intensity

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【57】	—	0
湿热环境 Thermal Environment	【53】	—	0
声环境 Sound Environment	【53】	↑	1
光环境 Light Environment	【59】	↓	-1
人文空间 Humanity Environment	【58】	↓	-3
水品质 Water Quality	【59】	↑	2

武汉

发展中的火炉城市，深受热湿困扰

Wuhan: Developing furnace city with heat and humidity problem

调研发现，武汉室内居住环境健康舒适体验综合评价指数56，与全国持平，但比18年略有上升。
武汉是四大火炉之一，夏天高温闷热，梅雨天潮湿，居民深受热湿环境的困扰。
2019年，全国重点168个城市空气质量排名中，武汉排名第8，但空气中的颗粒感和空气中油烟、烟味、宠物等导致的异味是影响空气质量的主要因素。
声环境方面，武汉正处于发展建设时期，施工建造频繁，噪音影响了居民的正常生活，尤其是三环线噪音扰民严重，居民呼吁隔音墙建设。

The survey found that the comprehensive evaluation index of Wuhan indoor living environment health and comfort experience is 56, which is the same as that of the whole country, but a slight increase from 2018.
Wuhan is one of the four major stoves. The summer is hot and sultry, and the rainy days are wet. Residents are deeply troubled by the hot and humid environment.
In 2019, Wuhan ranked 8th among the national air quality rankings of 168 key cities. However, the granularity in the air and the odors caused by oil smoke, smoke, and pets in the air are the main factors affecting air quality.
In terms of acoustic environment, Wuhan is in the period of development and construction. The construction is frequent.
Noise affects the normal life of residents. Especially the noise caused by the third ring line is very disturbing. Residents call for the construction of soundproof walls.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【54】	↓	-3
湿热环境 Thermal Environment	【51】	↓	-2
声环境 Sound Environment	【52】	—	0
光环境 Light Environment	【61】	↑	1
人文空间 Humanity Environment	【65】	↑	4
水品质 Water Quality	【61】	↑	4

上海

腾飞中的国际大都市，梅雨季节的潮湿感是主要问题

Shanghai: International city, wetness nags residents

2019年，全国重点168个城市空气质量排名中，上海排名第3，优良天数为309天，上海市环境空气质量持续改善。总体趋势为PM2.5占比下降、臭氧占比上升。空气质量需进一步改善。
上海经济发达，当地居民对生活品质要求高，对健康舒适期望高，体验综合评价指数55，比全国均值下降1个点。梅雨季节的潮湿感和冬季的寒冷潮湿是困扰上海居民热湿体验的主要问题。
水质方面，上海水资源丰富，但水垢多，水口感不佳，影响了居民水品质体验感。

In 2019, Shanghai ranked third among the 168 national key cities in terms of air quality, with 309 good days and continuous improvement in its environmental air quality. The overall trend is that the proportion of PM2.5 decreases and the proportion of ozone increases. Air quality needs to be further improved.
Economy in Shanghai is highly developed, and residents have high requirements for quality of life and high expectations for health and comfort. The comprehensive experience evaluation index of Shanghai is 55, one point lower than the national average. The wet feeling in rain season and the cold and wet in winter are the main problems troubling Shanghai residents' experience of heat and humidity.
In terms of water quality, water resources are plenty in Shanghai, but there are many scales and the water is not tasty, which affects the residents' experience of water quality.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【57】	—	0
湿热环境 Thermal Environment	【51】	↓	-2
声环境 Sound Environment	【53】	↑	1
光环境 Light Environment	【60】	—	0
人文空间 Humanity Environment	【62】	↑	1
水品质 Water Quality	【54】	↓	-3

南京

建设中的古都，室外噪音亟需解决

Nanjing: Developing ancient city, sound environment needs improvement

2019年，全国重点168个城市空气质量排名中，南京排名第31，空气质量有一定的改善，但PM2.5、PM10、NO2、降尘、酸雨是空气的主要污染源，需要持续改善。
南京室内居住环境健康舒适体验综合评价指数55，低于全国水平1个点，其中南京市城区和郊区环境噪音均有所上升，室外噪音是主要问题。冬季温度不适宜也是困扰南京居民的一大问题。

In 2019, Nanjing ranked 31st among the 168 national key cities in terms of air quality, with some improvement in air quality, but PM2.5, PM10, NO2, dust removal and acid rain are the main sources of air pollution, which need continuous improvement.
The comprehensive evaluation index of health and comfort experience of indoor living environment in Nanjing is 55, which is one point lower than the national average. Among them, the environmental noise in urban and suburban areas of Nanjing has increased, and outdoor noise is the main problem. Unfavourable winter temperatures have also been a problem for residents in Nanjing.)

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【58】	↑	1
湿热环境 Thermal Environment	【49】	↓	-4
声环境 Sound Environment	【47】	↓	-5
光环境 Light Environment	【61】	↑	1
人文空间 Humanity Environment	【60】	↓	-1
水品质 Water Quality	【60】	↑	3

广州

低调务实的花城，回南天带来的湿热感仍是主要问题

Guangzhou: Flower city, hot and humid environment is the primary problem

广州室内居住环境健康舒适体验综合评价指数55，略低于全国平均水平。回南天和台风的气候特征使祛湿成为广州居民普遍面临的问题。
2019年，全国重点168个城市空气质量排名中，广州排名第20，空气中的颗粒感和装修材料异味挥发需要进一步改善。由于密度较高的建筑和建筑材料的隔音问题，容易受到邻里之间的噪音困扰。

The comprehensive evaluation index of health and comfort experience of Indoor living environment in Guangzhou is 55, which is slightly lower than the national average. The climate characteristics of South and typhoon make clearing damp a common problem for residents in Guangzhou.
In 2019, Guangzhou ranked 20th among 168 key cities in terms of air quality. The particulate matter in the air and the smell volatilization of decoration materials need to be further improved.
Due to the high density of buildings and the noise insulation of building materials, it is easy to be disturbed by neighborhood noise.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index			
空气质量 Air Quality	【57】	—	0
湿热环境 Thermal Environment	【51】	↓	-2
声环境 Sound Environment	【51】	↓	-1
光环境 Light Environment	【59】	↓	-1
人文空间 Humanity Environment	【62】	↑	1
水品质 Water Quality	【56】	↓	-1

深圳

日新月异的活力城市，光环境和人文空间问题凸显

Shenzhen: Vigorous city, light and humanity environment are the problems

2019年，全国重点168个城市空气质量排名中，深圳排名第9，PM2.5颗粒浓度显著下降，但臭氧污染和扬尘污染有所上升，这也是空气质量体验下降的主要原因。
深圳室内居住环境健康舒适体验综合评价指数55，下降最明显的是光环境和人文空间。
深圳人均居住面积低，拥挤感强，室外照明及室内光线强度不适宜，致使人文空间和光环境体验感各降了4个点。

In 2019, Shenzhen ranked ninth among 168 key cities in terms of air quality, with PM2.5 dropping significantly, but ozone pollution and dust pollution rise, which is also the main reasons for the decline in air quality experience.
Shenzhen indoor living environment health and comfort experience comprehensive evaluation index is 55, and the most obvious drop is the light environment and humanity environment.
Shenzhen has a low per capita living area and a strong sense of crowding. The outdoor lighting and indoor light intensity are not appropriate, resulting in a decrease of 4 points in the experience of humanity space and light environment.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【55】	↓	-2
湿热环境 Thermal Environment	【53】	—	0
声环境 Sound Environment	【52】	—	0
光环境 Light Environment	【56】	↓	-4
人文空间 Humanity Environment	【57】	↓	-4
水品质 Water Quality	【58】	↑	1

重庆

稳健发展的雾城，重点解决粘湿/潮湿感

Chongqing: Developing fog city, foucus on humidity problems

重庆室内居住环境健康舒适体验综合评价指数55，略低于全国水平，但比18年有所提升。
重庆年平均相对湿度多在70%~80%，多雾天占1/3。夏季的粘湿感、梅雨多雨季节的潮湿感十分明显，是困扰重庆居民热湿环境的主要问题。
2019年，全国重点168个城市空气质量排名中，重庆排名第29，空气中的的油烟、香烟和宠物异味需进一步改善。
声环境方面，大规模建设改造使得建筑施工噪音污染严重，占整体噪声投诉的70%，有效控制建筑工地噪声污染是重庆居民迫切需改善的问题。

The comprehensive evaluation index of health and comfort experience of Indoor living environment in Chongqing is 55, which is slightly lower than the national level, but it has been better than 2018.
The average annual relative humidity in Chongqing is 70%~80%, and the foggy days account for 1/3. The sticky and wet feeling in summer and the wet feeling in rainy season are very obvious, which are the main problems troubling the hot and wet environment of Chongqing residents.
In 2019, Chongqing ranked 29th among 168 national key cities in terms of air quality, with further improvements needed to be made to the smell of oil-smoke, cigarettes and pets.
In terms of acoustic environment, large-scale construction and renovation have caused serious noise pollution from construction, accounting for 70% of the total noise complaints. Effective control of noise pollution from construction sites is an urgent problem for Chongqing residents to improve.)

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【56】	↓	-1
湿热环境 Thermal Environment	【51】	↓	-2
声环境 Sound Environment	【51】	↓	-1
光环境 Light Environment	【60】	—	0
人文空间 Humanity Environment	【61】	—	0
水品质 Water Quality	【56】	↓	-1

长沙

文娱星城，热湿问题突出

Changsha: A media city, wet and hot environment is the problem

长沙室内居住环境健康舒适体验综合评价指数54，低于全国水平2个点，相比18年也有所下降。除人文空间和声环境外，其他模块的体验均低于全国水平。
冬季体感温度不适宜/各房间温度差异大、梅雨季节潮湿是热湿环境中困扰长沙居民的主要因素。
2019年，全国重点168个城市空气质量排名中，长沙排名第58，空气质量优良率达到75.3%，但首要污染物仍是PM2.5，尤其19年年底遭遇了一轮重污染天气，居民的空气质量体验感极速下降。

The comprehensive evaluation index of health and comfort experience of indoor living environment in Changsha is 54, 2 points lower than the national level, which is also lower than that of 2018. Except humanistic space and harmonic environment, the experience of other modules is lower than the national average.
The main factors that trouble Changsha residents in the hot and humid environment are the unsuitability of somatosensory in winter/the difference of temperature between different rooms and the humidity in rain season.
In 2019, among the 168 key cities in China, Changsha ranked 58th with an excellent and good air quality rate of 75.3%. However, the primary pollutant was still PM2.5. In particular, a round of heavy pollution at the end of 2019 led to a rapid decline in residents' air quality experience.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【53】	↓	-4
湿热环境 Thermal Environment	【51】	↓	-2
声环境 Sound Environment	【52】	—	0
光环境 Light Environment	【56】	↓	-4
人文空间 Humanity Environment	【61】	—	0
水品质 Water Quality	【54】	↓	-3

2019中国室内居住环境健康舒适调研报告

贵阳

建设发展的生态文明城市，迫切解决光照不足的困扰

Guiyang: A developing green city, but lack enough sunshine

贵阳室内居住环境健康舒适体验综合评价指数53，低于全国水平3个点，相比18年也有明显的下降。
空间面积不适宜，室内色调不舒适导致人文空间体验指数比整体低8个点。
2019年，贵阳空气质量有明显的改善，空气质量平均优良天数比率达90%以上，但空气中的颗粒物PM10和PM2.5，仍是空气中首要改善的因素。这也是贵阳居民空气质量体验感下降的原因。
贵阳海拔高度在1100米左右，年平均阴天日数为235.1天，日平均日照时数为3.1小时，阳光非常宝贵，光照时间不充足和室内光线不适宜是光环境体验的主要问题。

The comprehensive evaluation index of health and comfort experience of Indoor living environment in Guiyang is 53, 3 points lower than the national level, which is also significantly lower than that of 2018.
Inappropriate space area and uncomfortable indoor hue all made the humanistic space experience index 8 points lower than the item index.
In 2019, Guiyang's air quality improved significantly, with the average number of days with good air quality reaching more than 90 percent. However, PM10 and PM2.5 in the air are still the primary factors for improvement. This is also the reason why Guiyang residents experienced a decline in air quality.
Guiyang is about 1100 meters above sea level. The average annual cloudy days are 235.1 days, and the average daily sunshine hours are 3.1, which means sunshine is very valuable.

室内居住环境健康舒适体验评价指数
Indoor Health & Comfort Living Experience
地区分项指数 VS全国分项平均数
Regional Index VS National Index

空气质量 Air Quality	【51】	↓	-6
湿热环境 Thermal Environment	【49】	↓	-4
声环境 Sound Environment	【54】	↑	2
光环境 Light Environment	【53】	↓	-7
人文空间 Humanity Environment	【53】	↓	-8
水品质 Water Quality	【59】	↑	2

福州

文明榕城，热湿是主要问题
Fuzhou: City of banyan, wetness is the main problem

福州室内居住环境健康舒适体验综合评价指数52，低于全国水平4个点，各项指数下降明显。
福州是四大火炉之首，湿热是困扰福州居民的首要问题。
2019年，全国重点168个城市空气质量排名中，福州排名第6，PM2.5颗粒浓度显著下降，但空气中主要污染物为臭氧以及室内建筑/装修材料挥发性异味，使得居民在空气质量的体验感下降。
声环境方面，受到建筑材料、墙体厚度和建筑密度的影响，室外噪音和邻里噪音是困扰福州居民声环境体验的主要因素。

The comprehensive evaluation index of health and comfort experience of Fuzhou indoor living environment is 52, which is 4 points lower than the national level.
Fuzhou is the head of the four furnaces, and heat and humidity are the main problems troubling Fuzhou residents.
In 2019, Fuzhou ranked sixth among 168 national key cities in terms of air quality, with a significant decrease in PM2.5 particle concentration. However, the main pollutants in the air are ozone and volatilization of indoor construction/decoration materials, which makes residents' experience in air quality decrease.
In terms of acoustic environment, affected by building materials, wall thickness, and building density, outdoor and neighbourhood noise are the main factors that disturb Fuzhou residents' acoustic environment experience.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index		
空气质量 Air Quality	【53】	-4
湿热环境 Thermal Environment	【47】	-6
声环境 Sound Environment	【49】	-3
光环境 Light Environment	【56】	-4
人文空间 Humanity Environment	【58】	-3
水品质 Water Quality	【54】	-3

合肥

发展中的庐州，需改善声和热湿环境
Hefei: Historical City which Sound and Humidity environment needs change

在本次调研的24个城市，合肥的室内居住环境健康舒适体验综合评价指数51，倒数并列第二，各指标均不同程度下降，比全国均值低5个点。
2019年，全国重点168个城市空气质量排名中，合肥排名67，空气中的颗粒感（PM2.5）和室内建筑/装修材料挥发异味是空气质量的主要问题，其体验感下降了7个点。
其次，冬季干燥、室外噪音大、居住面积不适宜导致在热湿环境、声环境、人文空间方面的健康舒适体验感比全国分项均值分别低了5、5、7个点。

Among the 24 cities surveyed in this study, the comprehensive evaluation index of indoor living environment health and comfort experience in Hefei is 51, which ranks the second in the last place, and all the index decline to different degrees, 5 points lower than the national average.
In 2019, Hefei ranked 67th among 168 key cities in terms of air quality, with particulate matter (PM2.5) in the air and peculiar smell volatilizing from indoor construction/decoration materials as the main problems, and its experience decreased by 7 points.
Secondly, dry winter, large outdoor noise and unsuitable humanity space lead to a health and comfortable experience 5, 5 and 7 points lower than the mean value of the national average in thermal and humid environment, sound environment, and humanity space.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index		
空气质量 Air Quality	【50】	-7
湿热环境 Thermal Environment	【48】	-5
声环境 Sound Environment	【47】	-5
光环境 Light Environment	【57】	-3
人文空间 Humanity Environment	【54】	-7
水品质 Water Quality	【55】	-2

石家庄

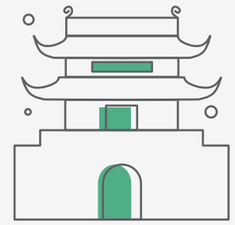
发展中的工业城市，热湿体验感最差
Shijiazhuang: Industrialized city with the worst hot and humid environment

2019年，全国重点168个城市空气质量排名中，石家庄排名倒数第二，虽然优良天数有了明显增加，但空气中的颗粒感（PM2.5）是空气质量的主要问题，使得居民在空气质量的体验感显著下降。
在本次调研的24个城市中，石家庄室内居住环境健康舒适体验综合评价指数51，低于全国水平4个点，排名倒数第二，同比18年也显著下降，冬季过于干燥，室外噪音大、水垢等问题，导致热湿环境、声环境和水品质体验感最差，相比全国分项平均数分别低了6、7、8个点。

In 2019, Shijiazhuang ranked second from the bottom among the 168 national key cities in terms of air quality. Although the number of good days has increased significantly, the particulate matter (PM2.5) in the air is a major problem of air quality, making residents' experience of air quality significantly lower.
In the study of 24 cities, Shijiazhuang indoor comprehensive evaluation index of healthy and comfortable living environment experience is 51, four points below the national level, ranked second from the bottom, which is lower than it in the same period of 2018. The winter is too dry, noisy outside, scale and other issues, lead to hot wet environment, sound environment, and water quality experience are the worst, and they are 6, 7, and 8 lower than the national average respectively.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index		
空气质量 Air Quality	【52】	-5
湿热环境 Thermal Environment	【47】	-6
声环境 Sound Environment	【49】	-3
光环境 Light Environment	【53】	-7
人文空间 Humanity Environment	【56】	-5
水品质 Water Quality	【49】	-8

无锡



江南鱼米之乡，声环境和热湿环境需迫切改善
Wuxi, The city of rice, sound and humidity problems are urgent

无锡室内居住环境健康舒适体验综合评价指数50，低于全国水平6个点，排名最后。
2019年，全国重点168个城市空气质量排名中，无锡排名71，空气中的颗粒感（PM2.5）和室内建筑/装修材料挥发异味导致空气质量下降了五个点。
室外噪音、邻里噪音是困扰无锡居民声环境体验的主要因素。
夏季高温、冬季寒冷、梅雨季节潮湿，热湿环境也成为主要问题。

he comprehensive evaluation index of health and comfortable experience of Indoor living environment in Wuxi is 50, 6 points lower than the national level, ranking the last.
In 2019, Wuxi ranked 71st among 168 key cities in terms of air quality, with particulate matter (PM2.5) and odor volatilization from indoor construction/decoration materials causing a 5 points drop in air quality.
Outdoor noise and neighbourhood noise are the main factors that disturb Wuxi residents' acoustic environment experience.
High temperature in summer, cold in winter, wet in rain season, and hot and humid environment have also become a major problem.

室内居住环境健康舒适体验评价指数 Indoor Health & Comfort Living Experience 地区分项指数 VS全国分项平均数 Regional Index VS National Index		
空气质量 Air Quality	【52】	-5
湿热环境 Thermal Environment	【47】	-6
声环境 Sound Environment	【45】	-7
光环境 Light Environment	【55】	-5
人文空间 Humanity Environment	【54】	-7
水品质 Water Quality	【51】	-6

4 EXPECTATION 期待

地大物博的中国，创造出大众丰富的地缘性的需求及居住特征，这意味着地产从业者们更加需要立足于城市现状，从城市居民的感受痛点出发，切实的解决实际问题， 为提升城市居民居住感受不断努力。

China, with its vast territory and abundant resources, has created abundant geographical demands and living characteristics of the public, which means that real estate practitioners need to base themselves on the current situation of the city; they need to start from the pain points of urban residents; effectively solve practical problems, and make continuous efforts to improve the living feelings of urban residents.

品质居住时代， 你准备好了吗？
Are you ready for an era of quality living?

由单纯的居住到对品质的需求，大众不断致力于改善自身的居住水平。经历过前几年的自我改善的尝试，大众更青睐于空气质量的改善。空气净化器依然受大众青睐，但已不是首选。变频空调购买意愿下降明显。新风系统超越所有设备成为大众考虑的首选。

From the simple living to the demand of quality, the public is constantly committed to improving their living standards. The public prefers to improve air quality after self-improvement attempts for several years. Air purifiers are still popular, but it is not the first choice. The purchase intention of the variable frequency air conditioner decreased obviously. The fresh air system has become the first choice of the public.

• 大众行动
Public Action

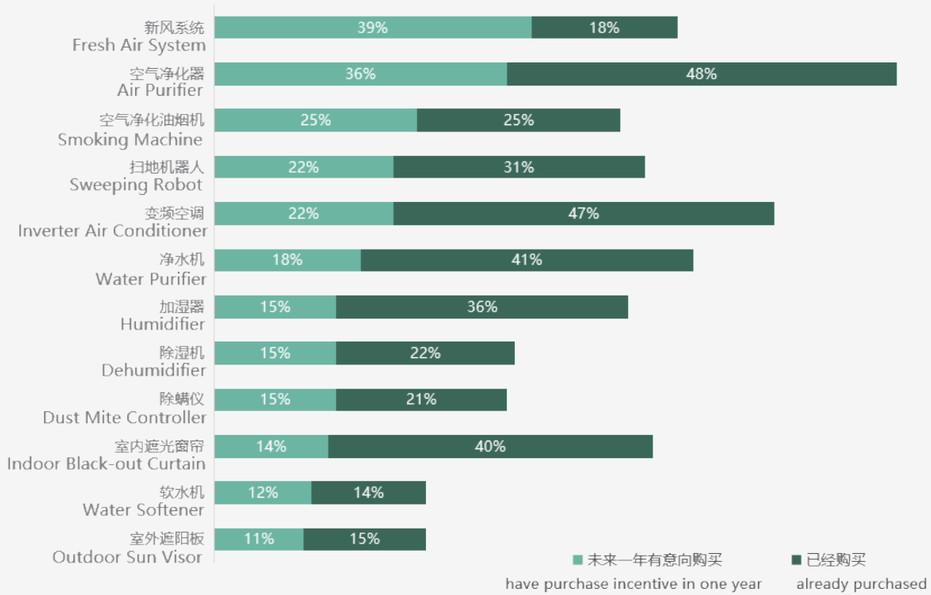
投入改善居住环境的意愿不减，改善效果明显的设备更受青睐
The willingness to invest in improving the living environment does not decrease, and the equipment with obvious improvement effect is more favoured

为了进一步改善居住环境，大众平均意愿在未来一年中投入7489元用于设备购买或室内改造，投入改善意愿依然与去年持平

In order to further improve the living environment, the public intends to invest 7,489 yuan in equipment purchase or indoor renovation in the next year averagely, and the intention of investment and improvement remains the same as last year.

在设备购买方面，大众依然偏向于购买可以改善室内空气质量的设备，但对设备的要求不断升级，如今，消费者更加青睐改善空气质量效果更好的新风系统。

In terms of equipment purchase, the public still prefers to buy equipment that can improve indoor air quality, but the requirements for equipment are constantly increasing. Today, consumers prefer the fresh air system with a better air quality improvement effect.


新风系统 Fresh Air System 39% 18%
空气净化器 Air Purifier 36% 48%
空气净化油烟机 Smoking Machine 25% 25%
扫地机器人 Sweeping Robot 22% 31%
变频空调 Inverter Air Conditioner 22% 47%
净水机 Water Purifier 18% 41%
加湿器 Humidifier 15% 36%
除湿机 Dehumidifier 15% 22%
除螨仪 Dust Mite Controller 15% 21%
室内遮光窗帘 Indoor Black-out Curtain 14% 40%
软水机 Water Softener 12% 14%
室外遮阳板 Outdoor Sun Visor 11% 15%
未来一年有意向购买 have purchase incentive in one year
已经购买 already purchased

图：2019年大众已购买和未来一年有意向购买的设备对比
Graph: the Comparison between 'purchased' and 'purchase incentive'

“房住不炒”与“旧房改造”成为两会热点，旨在提升居民生活品质"

"Housing without speculation" and "old house renovation" have become hot topics of the two-national conference, aiming to improve the quality of residents' life

在刚刚落下帷幕的2020年两会上，建设“绿色中国”与“健康中国”仍是主格调。“房住不炒”被再次提及，国家持续坚持推动房地产行业向高质量、人性化、环保绿色方向发展，让建筑回归居住属性，为居民提供更优的生活品质；“旧房改造”这一惠民举措也在两会上落实了具体目标：2020年我国计划改造城镇老旧小区3.9万个，涉及居民近700万户，进一步提升居民的幸福满意度，促进绿色城市发展。

At the two sessions in 2020 which was just ended, building "Green China" and "Healthy China" is still the main idea. "Housing without speculation" has been mentioned again. The government continues to promote the development of real estate industry in the direction of high quality, humanization, and environmental protection, so that the residential property of buildings can be emphasized again and buildings can provide better life quality for residents; The specific goal of "old house renovation" has also been mentioned in the two sessions: in 2020, China plans to renovate 39000 old urban residential areas, involving nearly 7 million residents. This action can further improve the satisfaction of residents and promote the development of green cities.

建筑节能行业为健康绿色建筑的发展助力

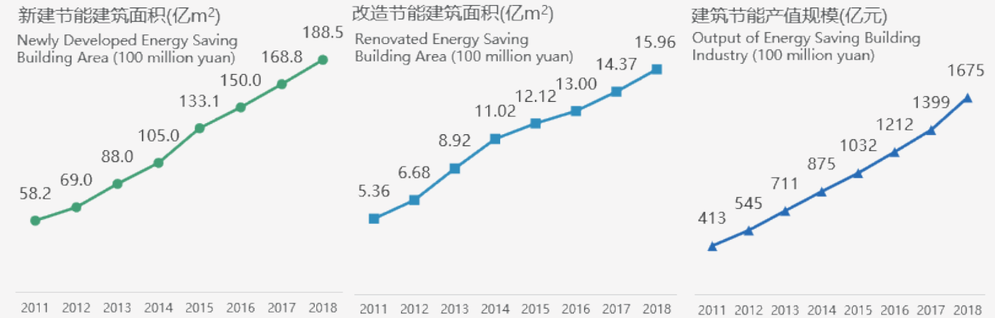
Building energy saving industry motivates the development of healthy green buildings

在新增节能面积领域，截至2018年，全国城镇新增节能建筑面积约为19.7亿平方米，累计建成节能建筑面积约为188.5亿平方米。在改造节能面积领域，2018年我国完成节能建筑改造面积在1.59亿平方米左右，累计改造面积约为15.96亿平方米。建筑节能面积逐年增加，促进着绿色建筑的发展。

By 2018, the newly increased area of energy-saving buildings in towns was about 1.97 billion square meters, and the accumulated energy-saving building area was about 18.85 billion square meters. As for the transformation area of energy-saving buildings, China completed about 159 million square meters in 2018, and the cumulative transformation area was about 1.596 billion square meters. Building energy-saving area increases year by year, promoting the development of green buildings.

中国建筑节能行业产值也在快速提升，自2011年来，我国建筑节能行业产值快速提升，2018年我国建筑节能行业产值规模已达1675亿元，预计2020年，建筑节能行业产值将超2000亿元，未来呈绿色化方向发展。

The output value of China's building energy-saving industry is also rising rapidly. Since 2011, the output value of this industry has rapidly increased. In 2018, the output value of the industry has reached 167.5 billion yuan. It is estimated that the output value of building energy-saving industry will exceed 200 billion yuan in 2020, and it will develop in a green direction in the future.



资料来源：中国产业信息网
From: China Industry Information Website

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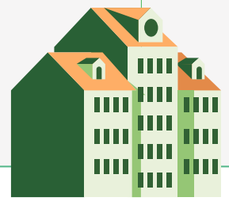

以朗诗集团等为代表的绿色房企，积极践行绿色发展理念，引领行业的健康绿色转型

Green real estate enterprises, represented by LandSea group, actively implement the concept of green development and lead the healthy and green transformation of the industry

截至2018年底，我国绿色建筑标准的数量突破13000个，建筑面积超过2亿平方米，朗诗集团、中国金茂、万科集团、葛洲坝地产等企业已成为中国绿色地产的龙头。这些龙头房企较早的投身于健康绿色地产领域，通过绿色技术的升级和创新，坚持打造更高质量的住宅产品，不断推动着健康绿色地产的推广与发展。

By the end of 2018, the number of green building standards in China has exceeded 13000, with a construction area of more than 200 million square meters. LandSea group, China Jinmao, Vanke Group, Gezhouba real estate, and other enterprises have become the leaders of green real estate in China. These leading real estate enterprises invested early in the field of healthy green real estate. Through the upgrading and innovation of green technology, they insist to build higher quality residential products and constantly to promote the development of the healthy and green real estate.

国家的倡导，行业的发展，企业的行动，最终将推动大众美好生活的中国梦早日实现。当室外不论是炎炎夏日，或是皑皑白雪的冬季，居于四季如春的房间内，不闻窗外之吵杂，轻闭双眼，品一杯茗，一股甘甜注入心田，轻吸一口气，清爽的空气浸入心脾，美好的中国梦在你我之间荡漾流转。人生得此，夫复何求？

Government advocacy, industry development, and corporate actions will ultimately promote the Chinese dream of the masses of better life to be true. Whether it is hot summer or snowy winter outside, people can stay in the pleasant indoor rooms, closing their eyes and tasting a cup of tea. This may be the wonderful life in the world.

APPENDIX: RESEARCH INSTRUCTIONS
附： 调研说明

室内居住环境健康舒适体验评价指数算法介绍
Introduction to the Index Algorithm for the Evaluation of the Health & Comfort Experience of Indoor Living Environment

室内居住环境健康舒适体验评价指数涵盖了消费者在室内空气质量、室内湿热环境、室内声环境、室内光环境、人文空间和水品质六大模块下的体验感受，每个模块以及模块细项都被赋予了不同的权重指标，结合调研结果，我们最终得出室内居住环境健康舒适体验评价指数。

The evaluation index of indoor living environment health & comfort experience covers consumers' experience under the six modules of indoor air quality, indoor thermal environment, indoor sound environment, indoor light environment, humanity environment, and water quality. Each module and module details are given different weighting indicators. Combining with the survey results, we finally get the index for evaluating the indoor living environment health & comfort experience.

$$\text{室内居住环境健康舒适体验评价指数} = \sum_{i=1}^{n} W_i \quad \text{细项指标得分}_i$$

$$= W_{KQ} * \text{室内空气质量得分} + W_{RS} * \text{室内热湿环境得分} + W_{SY} * \text{室内声环境得分}$$

$$+ W_G * \text{室内光环境得分} + W_{RW} * \text{室内人文空间环境得分} + W_{SZ} * \text{室内水品质得分}$$

其中：$W_i = \sum_{i=1,\ j=1}^{n} W_{ij}$ ：一级指标权重等于二级细项指标权重之和。

人群画像
Sample portrait

本次研究覆盖6大区域，24个城市，选取20-55岁的城市长住居民，有效样本达4200个。研究涉及2072位男性受访者，2128位女性受访者。其中26-35岁是主力人群，家庭收入以1.5万-3万为主，80%的人拥有本科及以上学历。

This study covers 6 regions, 24 cities. The number of effective samples is 4200, which is composed of 20-55-year-old urban residents.
The study involved 2072 male and 2128 female respondents. Among them, 26-35 years old is the main group, with a family income of 15000-30000, and 80% of them have a bachelor degree or above.

联合发布机构

中国城市科学研究会
绿色建筑与节能专业委员会
China Green Building Council of CUSU

中国城市科学研究会绿色建筑与节能专业委员会（简称：中国城科会绿建委），英文名称 China Green Building Council，缩写为 China GBC，是经中国科协批准，民政部登记注册的中国城市科学研究会的分支机构，是协助政府推动我国绿色建筑发展的全国性、公益性学术团体，业务归住房和城乡建设部指导。本会由全国从事绿色建筑研究与实践的专家、学者、专业技术人员和城市规划、建筑设计、房地产开发、工程建设、咨询服务及科研、教育等有关部门和企事业单位组成。

China Green Building Council (China GBC) is a branch of Chinese Society for Urban Studies, approved by the Chinese Association for Science and Technology and registered by the Ministry of Civic Affairs. It is a non-profit national and academic organization to support the government in promoting the green building development in China, which is directed by Ministry of Housing and Urban-Rural. It is formed freely by experts, scholars and professionals who are engaged in green building research and practice and by a wide range of companies and enterprises in the fields of planning, design, real estate development, engineering, construction and consultation, as well as by research and educational institutions and related administrative agencies.

中国被动式建筑联盟，全称“中国建筑节能协会被动式建筑联盟”，英文名称Passive House Alliance of China，缩写PHAChina，是由中国建筑节能协会批准成立的二级协会组织，是中国建筑节能的积极推动者，也是世界节能减碳事业的践行者，通过整合建筑节能行业尤其是被动式技术产业各方力量，包括金融、媒体、地产、设计、咨询、施工、检测、部品部件供应商等，以推广更健康舒适的可持续建筑为目的，以被动式建筑技术为载体，以微能耗建筑实现社会公众的健康、美好生活。

Passive House Alliance of China，full name ‘China Association of Building Energy Efficiency Passive House Alliance’, English name ‘Passive House Alliance of China’, abbreviation PHAChina, is the second-class association approved by CABEE. It is the active promoter of Chinese building energy saving activities and also the practitioner of worldwide energy saving and carbon reduction activities. Via integration of building energy-saving industry parties especially passive technology industry participates, including finance, media, real estate, design, consulting, construction, test, elements supplier and etc., the purpose of popularization of more comfort sustainable house can be realized. Healthy and glorious life combined with micro-energy consumption for whole society can be achieved by adopting passive house technology.

朗诗集团

朗诗集团股份有限公司 创立于2001年，是国际化的绿色开发服务商和生活运营商。
朗诗自2004年开始实施聚焦绿色产品差异化的发展战略，以绿色思维，践行“人本、阳光、绿色”的价值观，引领绿色生活。
以绿色地产的开发服务为根基，立足中国，布局海外。同时，积极发展新业务，培育了长租公寓业务朗诗寓、养老服务业务朗诗常青藤、绿色金融业务朗诗青杉资本和物业服务业务朗诗绿色生活。
业务范围已覆盖北京、上海、深圳、天津、南京、重庆、杭州、武汉、成都、西安、广州等中国三十多个主要城市，以及美国主要一线门户地区。

Established in 2001, Landsea is an international green housing developer and green life service provider in China. By adhering to a diversified development strategy featuring vertical integration, Landsea is building on the foundation of green housing development, primarily in China but also expanding to overseas markets. In addition to its in-depth exploration of green building, Landsea is actively developing new business areas including a long-term rental business (Landsea Apartments), elderly care business (Landsea Green Aged Care), green financing business (Landsea Green Fir Capital) and property service business (Landsea Green Life), and has launched Landleaf Technology, a sister company of Landsea. Thus, a “healthy, green and sustainable” business ecology has been formed step by step.

LANDLEAF朗绿
人居科技领跑者

上海朗绿建筑科技股份有限公司（以下简称“朗绿科技”），总部位于中国上海，成立于2013年,是一家基于大数据的绿色建筑科技服务商，秉承“健康、舒适、节能、环保、智慧”的人居理念，致力为住宅、办公、养老、酒店、教育、康养等开发商客户及注重健康舒适生活品质、崇尚环保的企业客户提供一体化、全流程绿建科技解决方案。朗绿科技业务贯穿建筑全生命周期，包括建筑节能环保设计、建筑材料和建筑设备的研究和应用、建筑运行和监测后评估等。

Shanghai Landleaf Architecture Technology Co., Ltd. (hereinafter referred to as "Landleaf"), headquartered in Shanghai, China, was founded in 2013. It is a green building technology service provider based on big data. Adhering to the residential concept of "health, comfort, energy conservation, environmental protection, wisdom", it is committed to the development of housing, office, pension, hotel, education, health care, etc The developer customers and the enterprise customers who pay attention to healthy and comfortable life quality and advocate environmental protection provide integrated and whole process green construction technology solutions. The business of Landleaf runs through the whole life cycle of the building, including the design of energy conservation and environmental protection of the building, the research and application of building materials and equipment, the operation of the building and the post monitoring evaluation, etc.

Ipsos

益普索Ipsos 是全球第三大研究集团，于1975年成立于法国巴黎，1999年在巴黎上市，在全球89个市场设有办公室，是全球唯一由研究专业人士拥有并管理的市场研究集团。益普索Ipsos于2000年进入中国，已成为中国最大的个案研究公司，在中国大陆的上海、北京、广州、深圳、成都、武汉等6个城市设有办公室。益普索Ipsos专注于战略咨询、商务咨询、定性研究，市场策略及消费者理解 、社媒资讯分析、创新研究、品牌健康追踪、客户体验管理、企业及意见领袖声誉、用户体验、创意评估、质量管理、神秘客、数据采集、新车诊断、医疗健康等多个领域。服务范围涵盖了快消、母婴、金融、汽车、通讯、医药保健、地产、泛娱乐、互联网与新科技、教育和旅游等诸多行业。益普索Ipsos正在从数据获取、洞察提供、数据平台和顾问咨询等四个方面进行颠覆式创新，建立“数据-洞察-行动”的闭环。除提供洞察以外，着力打造以洞察为指导的顾客体验优化及精准营销服务，以成为科技驱动的市场营销服务商。

Founded in France in 1975 and listed in France in 1999, Ipsos is the third marketing research group in the world with offices in 89 markets. Ipsos is the only market research company ownedand managed by research professionals in global. Entering into China in 2000, Ipsos now has 6 offices in Chinese Mailand including Shanghai, Beijing, Guangzhou, Shenzhen, Chengdu and Wuhan. Ipsos delivers insightful solutions on strategy3 , business consulting, qualitative research, market strategy & consumer understanding, social intelligence analytics, innovation, brand health tracking, customer experience, corporate reputation, user experience, creative excellence, quality measurement, mystery shopping (MSP), observer, clinics & mobilsity lab, healthcare and on other fields. Our service covers FMCG, mom & baby, finance, auto, telecom, healthcare, real estate, pan-entertainment, Internet & new-tech, education and tourism, etc. Ipsos makes disruptive innovation in four aspects which are data acquisition, insight providing, data platform and consulting for building ‘Data-Insight-Action’ circle. Based on this, Ipsos aim to offer customer experience improvement and precision marketing service for our clients and commit to be a tech-driven marketing service provider.

考研资料：数学、英语、政治、管综、西综、法硕等（整合各大机构）
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